

ABSTRACT OF DISCLOSURE

Method and apparatus for containing and protecting the magnets of a permanent magnet rotor spinning at high speeds without the use of a sleeve and is applicable to all permanent magnet rotors with two or more poles. Magnetic pole pieces are used to mechanically retain the magnets as well as provide a low reluctance path for the magnetic field to travel. The pole pieces and magnets are oriented radially on a hub made of a non-magnetic material such that the flux path of the magnets to the rotor poles is not shorted through the hub or shaft. The rotor poles have a taper angle and are secured to the rotor hub; the pole taper angle trapping the magnets, which have a matching taper angle. End cap pieces are provided to retain the rotor poles and the permanent magnets as an integral magnets/poles subassembly for use in a motor or generator.